

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2003/001965

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 H01L 41/08, H03H 9/15

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L 41 H03H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean patents and applications for inventions, since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 1-158810 A (MURATA MFG. CO. LTD) 21 JUNE 1989 see the claims 1-2, detailed description, figures 1,14,16	1-11, 13 12
X A	JP 3- 265204 A (MURATA MFG. CO. LTD) 26 NOVEMBER 1991 see the claim 1, detailed description, figures 1,4	1-7, 13 8-10, 11-12
A	US 2002/0135274 A1 (MURATA MFG. CO. LTD) 26 SEPTEMBER 2002 see the figure 1	1-13
A	JP 6-224677 A (MURATA MFG. CO. LTD) 12 AUGUST 1994 see the whole document	1-13
A	JP 59-172821 A (MURATA MFG. CO. LTD) 29 SEPTEMBER 1984 see the claim 1, figures 3-8	1-13

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

05 JANUARY 2004 (05.01.2004)

Date of mailing of the international search report

05 JANUARY 2004 (05.01.2004)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM, Dong Yup

Telephone No. 82-42-481-5749



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2003/001965

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 11-68187 A (MATSUSHITA ELECTRIC IND CO. LTD) 9 MARCH 1999 see the whole document	14-28
A, P	JP 2002- 314160 A (MURATA MFG. CO. LTD) 25 OCTOBER 2002 see the whole document	14-28
A	JP 9-270540 A (CHICHIBU ONODA CEMENT CORP) 14 OCTOBER 1997 see the claims 1-3, figures 1-3	14-28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2003/001965

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 1-158810 A	21.06.1989	NONE	
JP 3-265204 A	26.11.1991	NONE	
US 2002/0135274 A1	26.09.2002	JP 2001-177014 A US 2001/024076 AA US 6448696 BB US 2002/135274 AA DE 10063265 A1 CN 1303172 A	29.06.2001 27.09.2001 10.09.2002 26.09.2002 05.07.2001 11.07.2001
JP 6-224677 A	12.08.1994	NONE	
JP 59-172821 A	29.09.1984	JP 3026568 B4	11.04.1991
JP 11-68187 A	09.03.1999	NONE	
JP 2002- 314160 A	25.10.2002	NONE	
JP 9-270540 A	14.10.1997	NONE	

INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2003/001965

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

- I. Claims 1-13 directed to a piezoelectric resonator with a vibrating cavity.
- II. Claims 14-28 directed to a piezoelectric vibrator having isolated inner electrodes.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any addition fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.